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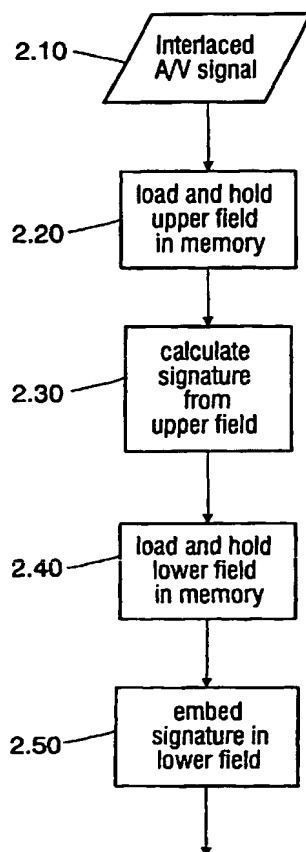
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(54) Title: REAL-TIME SIGNATURE EMBEDDING IN VIDEO



(57) Abstract: A method and system for embedding an authentication signature in an audio-visual signal such that only a part of an entire frame of the audio-visual signal is stored in a memory while the signature bits are calculated and the watermark is embedded. A signature is formed based on a first portion of said audio-visual signal, whereby said first portion is a pattern of horizontal lines of said audio-visual signal and has fewer lines than the number of lines of the entire audio-visual signal. Thereafter the signature generated is embedded in said audio-visual signal in the first portion and/or in another portion of the frame to be authenticated, whereby the other portion also is a pattern of horizontal lines. Thus only memory for some lines instead for all lines of the audio-visual signal is needed. In the case of an interlaced audio-visual signal, the first portion is preferably the first field of a frame of said audio-visual signal and the second portion is the second field of said audio-visual signal. In the case of a non-interlaced audio-visual signal, slices of said lines are preferably used for said portions.



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European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,  
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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## INTERNATIONAL SEARCH REPORT

II International Application No

PCT/IB 03/02626

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 H04N1/32 H04N7/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BARNI M ET AL: "Digital watermarking for the authentication of AVS data" SIGNAL PROCESSING X THEORIES AND APPLICATIONS. PROCEEDINGS OF EUSIPCO 2000. TENTH EUROPEAN SIGNAL PROCESSING CONFERENCE, PROCEEDINGS OF 10TH EUROPEAN SIGNAL PROCESSING CONFERENCE, TAMPERE, FINLAND, 4-8 SEPT. 2000, pages 1037-1040 vol.2, XP002252814 2000, Tampere, Finland, Tampere Univ. Technology, Finland ISBN: 952-15-0443-9 the whole document	1,2,7, 9-16
A	---	3-6,8
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☒ Further documents are listed in the continuation of box C.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FRIDRICH J: "Image watermarking for tamper detection" PROCEEDINGS 1998 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP98 (CAT. NO.98CB36269), PROCEEDINGS OF IPCIP'98 INTERNATIONAL CONFERENCE ON IMAGE PROCESSING, CHICAGO, IL, USA, 4-7 OCT. 1998, pages 404-408 vol.2, XP010308634 1998, Los Alamitos, CA, USA, IEEE Comput. Soc, USA ISBN: 0-8186-8821-1 abstract	1-3,7,8, 11-16
A	page 405, left-hand column, line 22 -right-hand column, line 41 -----	4-6,9,10
X	FRIDRICH J: "Methods for tamper detection in digital images" PROCEEDINGS OF IEEE WORKSHOP ON ISPACS, XX, XX, 1999, pages 1-6, XP002952952 the whole document -----	1-3,7,8, 11-16